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INTRODUCTION

The College of Arts and Sciences proudly presents *Undergraduate Scholarship in the College of Arts and Sciences*, the third issue in our annual book of abstracts, containing the work conducted by students in collaboration with faculty mentors. As you will see by the depth and variety of the projects, these students successfully used their research, critical thinking, and writing skills to produce scholarship that has been recognized by the larger scholarly community. In fact, these collected works illustrate the students' ability to communicate at a professional level; in many cases, these students have presented and defended their scholarship to the greater academic community at regional, national, and international meetings. We congratulate all the students and faculty mentors who are represented in this collection for their dedication to learning.

This book is also the first designed and edited by Winthrop University undergraduate students. For their good work, we thank Kristen Jeffords for editing the abstracts, Paul Jones for creating the cover art, and Stephanie Sheldon for the book design and layout.



Dr. Dwight Dimaculangan
Director of Undergraduate Research
College of Arts and Sciences

Dr. Debra C. Boyd
Dean of the College of Arts and Sciences

April 2005

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Undergraduate students from various disciplines have collaborated to create this book. Paul Jones, who is majoring in Illustration, contributed the cover art. His concept was to create a 3D box conveying the mix of arts and sciences with student direction as the focal point. Stephanie Sheldon, who is majoring in Visual Communication Design, contributed the cover design and book layout. Her concept was to create a well-organized book that highlighted the student, honors thesis committee, faculty mentors, and departments that contributed to the abstracts. Kristen Jeffords, who is majoring in English, contributed her editing expertise for each of the abstracts.



HONORS THESIS ABSTRACTS

THE ASSOCIATION BETWEEN COLLEGE ADJUSTMENT, SOCIAL ANXIETY, AND FAMILY SUPPORT

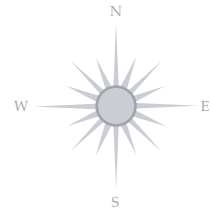
Presented at the Southern Regional Honors Conference, March 31- April 2, 2005

College matriculation involves many new experiences and challenges (Lepore, 1992; Trockel, Barnes & Dennis, 2000; Perry, 2004; Lo & Globetti, 1993) that can prompt quite a bit of stress. Individual students vary in their ability to cope with stressors inherent to college life. Social anxiety is an individual difference variable that may negatively impact students' ability to cope. Those high in social anxiety are more likely to experience feelings of homesickness (Urnai et. al., 2003) and engage in dysfunctional behavior such as binge drinking (Kidorf & Lang, 1999). Having a strong social support can act as a buffer to psychological stress (Lepore, 1992) and academic stress (Zaleski, Levey-Thors, & Schiaffino, 1998). Unfortunately, students with social anxiety may lack the ability to form new social supports in college, leading to greater vulnerability to stress. The present study examined whether strong family support may act as a buffer to help socially anxious students effectively cope with stress. Findings suggest that strong family support was associated with a positive college experience, academic satisfaction, a higher G.P.A., and decreased health problems. Social anxiety was associated with an increase in physiological symptoms of stress. Overall, strong family support played the most significant role in college adjustment, while students with social anxiety had the most trouble coping with the transition to college.

ANOTHER BROKEN PROMISE? THE INDIAN HEALTH SERVICE AND NATIVE AMERICAN HEALTH.

Presented at the Southern Regional Honors Conference, March 31-April 2, 2005.

The Native American Healthcare system falls extremely short of its inherent responsibility to the people it serves and requires amendment through new and existing legislation. This can only be achieved through knowledge of the current situation, a detailed account of how this situation was created, and an understanding of how to address these problems in ways that improve this societal sector to be a functioning part of America. Therefore, this paper focuses on the economic and social adversities currently facing the Native American population by addressing the many reasons for its present state. This segment of the population possesses an obligation from the federal government, as payment for lands and years of unjust treatment,



Student: Shannon Dixon (2005)
Honors Thesis Committee:
Donna Webster Nelson,
Ph.D., Jeff Sinn, Ph.D. and
Merry Sleigh, Ph.D.
Department of Psychology

Student: Tiffany Davis (2005).
Honors Thesis Committee:
Karen Kedrowski, Ph.D.,
Scott Huffmon, Ph.D., and
Marilyn Sarow, Ph.D.
Department of Political Science

in the form of free health care coverage, protection, and support. However, this “free” health care, provided through the Indian Health Service, is often inadequate, under-funded, inaccessible, and unequal for all aspects of the population either rural or urban. The paper also focuses on the underlying first amendment violations regarding free exercise of religion as it relates to health care coverage through Supreme Court cases, testimonials, and secondary research. This paper also identifies racial segmentation issues in the delivery of health services by identifying variables that have contributed to the inefficiencies of the Native American Health care system, and provides a means of resolving these disparities through legislation. This examination will provide identifiable health differences between the average person and the Native American, as well as a detailed analysis of various legislative acts and committee briefings.

PHYLOGENY OF THE MONONEGAVIRALES AND EVOLUTIONARY DIVERGENCE OF THE STRUCTURAL GLYCOPROTEIN GENE

Presented at the South Carolina Academy of Science Meeting, March 16, 2005

Presented to the Department of Biology, Winthrop University, April 6, 2005

Presented at the National Conference on Undergraduate Research, April 21, 2005

Student: Kristen A.
Ledbetter (2005)
Honors Thesis
Committee: Kristi
Westover, Ph.D., Dwight
Dimaculangan, Ph.D., and
Laura Glasscock, Ph.D.
Department of Biology

The viral order Mononegavirales includes well-known and newly emerging negative-sense RNA viruses with four recognized families: Bornaviridae, Filoviridae, Rhabdoviridae, and Paramyxoviridae. Even with many published phylogenetic analyses of the Mononegavirales, controversies regarding the relationships between subfamilies of the Rhabdoviridae as well as placement of several unclassified viruses exist. For example, the Novirhabdovirus subfamily has been proposed to form a closely related sister group to the Lyssavirus subfamily (1996 Virus Research 42:65-80) and has also been proposed to be ancestral to a large Lyssavirus-Vesiculovirus-Ephemerovirus clade (2002 Phytopathology 92:1167-1174). In addition there are controversies regarding the placement of several new viruses including Sigma virus, sea trout rhabdovirus, and trout rhabdovirus 903/87. The Sigma virus has been proposed to represent a new Rhabdoviridae subfamily most closely related to the Vesiculoviruses (1996 Virus Research 42:65-80). Phylogenetic relationships of the Mononegavirales were examined using structural glycoprotein sequences. A neighbor-joining tree was generated from a multiple amino acid alignment using uncorrected p-distance with bootstrap replication. In addition, the number of synonymous (dS) and nonsynonymous (dN) substitutions were estimated to test whether natural selection has favored amino acid changes in glycoprotein sequences within subfamily-level taxonomic classifications. There was no support for a significant relationship between the Novirhabdovirus and Lyssavirus subfamilies or for an ancestral

Novirhabdovirus clade. Contrary to previous results, the Ephemeroviruses were basal to a larger Lyssavirus-Vesiculovirus-Novirhabdovirus clade. The unclassified sea trout rhabdovirus and trout rhabdovirus 903/87 were significantly related to each other and formed a clade with the Vesiculovirus subfamily. The unclassified Sigma virus formed non-significant clade with Flanders virus and may represent a new Rhabdoviridae sub-family most closely related to the Vesiculoviruses as previously proposed. For each Rhabdoviridae sub-family dS was significantly greater than dN. Vesiculovirus dS and dN were also significantly greater than estimates for both the Lyssaviruses and Novirhabdoviruses. We hypothesize that increased amino acid replacements in the glycoprotein gene are due to elevated dS estimates versus natural selection acting to favor amino acid replacements in the Vesiculovirus lineage. Further analysis of particular antigenic regions of the glycoprotein gene will be analyzed in the future to investigate this hypothesis.

THE PARANORMAL AND THE SUPERNATURAL: AN ETYMOLOGICAL ANALYSIS OF WORDS CONCERNING THE TRANSCENDENTAL.

Presented at the Southern Regional Honors Conference, March 31, 2005

Presented to the Department of English Winthrop University, April 2005

Throughout its entire history, the human race has maintained an obsession with the idea of supernatural or paranormal entities or activities. There are, however, as many ideas concerning the nature of the transcendental as there are cultures that have existed throughout history. Moreover, in a specific culture or group of people, the notions of the supernatural will often change over time. This paper examines the evolution of attitudes concerning the paranormal among English speaking peoples through an etymological study of specific words describing or denoting the transcendental, starting with the Indo-European prototypes and continuing to present-day English. The paper charts the influence of external events, such as the Christianization of early Britain, but mainly focuses on the internal history of linguistic development.

Student: Jessica Davis (2005)
Honors Thesis Committee:
Josephine Koster, Ph.D.,
Matthew Fike, Ph.D. and
Kelly Richardson, Ph.D.
Department of English

WHAT MAKES A PRESIDENT MEMORABLE? PRESIDENTS WILSON V. COOLIDGE.

Presented at the Southern Regional Honors Conference, April 1, 2005.

Each president has a different reputation and level of respect given to him by the American people. Some are simply talked about more than others. I am looking at the presidencies of Woodrow Wilson and Calvin Coolidge and comparing them to decipher whether President Wilson is discussed more than President Coolidge based on their personalities or on the events

Student: Erin Long (2005)
Honors Thesis
Committee: Scott
Huffman, Ph.D., Karen
Kedrowski, Ph.D., and

Adolphus Belk, Ph.D.
Department of Political Science

that took place during their respective presidencies. By researching past books including biographies and studies of both presidential personalities and the question of presidential greatness, I am going to compare these two presidents and the events they presided over. These particular presidents were selected based on the relatively close years in which they served and the fact that they were both elected at least once as opposed to just fulfilling another president's term. I am hoping to discover which affects the strength of a legacy, personality or events.

TARGETING A PARADOX: TWEENAGERS' MEDIA USAGE AND PURCHASING BEHAVIOR

Presented at the Southern Regional Honors Conference, April 1, 2005

Student: Bethany
Senkowsky (2005)
Honors Thesis Committee:
Jane Boyd Thomas, Ph.D.,
Marilyn Sarow, Ph.D.,
Hemant Patwardhan, Ph.D.
Department of Mass
Communication

Today's tweenagers (ages eight to fourteen) wield more spending power and have greater media access than their predecessors. They are the easiest of all youth groups to reach via advertising. Limited research has been conducted to examine the connection between tweens' media usage and purchasing behavior. The purpose of this study was to explore this connection. A diverse sample of 120 tweenagers completed a three-part, self-administered survey during an event in a large Southern city. The 23 item instrument explored Media Usage and Personal Concerns, Purchase Behavior, and Personal Information. Research findings indicated that tweenagers use multiple technological and media platforms for information and entertainment, with high Internet use for shopping and information. ANOVA findings indicated a statistically significant relationship ($p < .05$) between tweenagers' media usage and purchasing behavior. Additional investigation revealed that purchase information, spending, gender, and age differences were related to media usage. These findings can be used to develop a financially and socially important understanding of this generation. To maximize potential purchasing power, tweenagers must be properly targeted. The relationship between media usage and purchase habits could aid marketers in reaching this market segment.

THE NATURE OF STUDENT DEBT

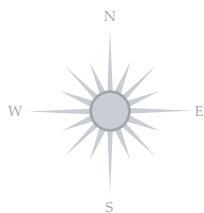
Presented at the Southern Regional Honors Conference, April 1, 2005

Student: Carole Ward (2005)
Honors Thesis
Committee: C. Jack
Tucker, Ph.D. and Kelly
James, Ph.D.
Department of Sociology
and Anthropology

The literature reviewed focused on the debt of public university students, how this debt develops, and how it has changed over recent years. Two main sources of student debt were identified: loans and credit cards. The federal government has had a long and influential history with higher education. Some important decisions have included the Land-Grant College Acts of 1862, the G.I. Bill of 1944, and the Civil Right Act. All of these legislations recognized the federal government's role in educating

its citizens because of the positive benefits that society receives. Some of these benefits include health status, lower infant mortality rates, more money given to charity, etc. In more recent times a second philosophy has developed concerning the federal government's role in higher education. It stresses the need for students to become more financially responsible for their education and is put into effect with cutting federal funding for institutions of higher education. These institutions are then forced to rely on increased student tuition. This is rationalized because of the likelihood that students will make more in their chosen professions upon graduation. In addition, during times of recession, such as the one experienced in 2001, higher education experiences disproportionate decreases in funding compared to other areas that receive public aid. The combination of rising cost of tuition and the slower growth of average family income for middle and lower income families has created a situation in which more and more students are having to take out loans in order to go on to higher education. The result is a large increase in the average amount borrowed and the total number of loans. Credit cards are other source of debt for college students. The level of card holding students has increased significantly over the past decade. To card issuing companies, college aged students are future long-term card holders. Financially uneducated students can come into contact with numerous credit card solicitations on their campuses. The schools that allow these solicitations often receive some sort of monetary incentive for allowing solicitations on their campus. There are several methods that can be undertaken to control student debt, including better financial education and alternative federal aid programs that are in effect in other countries.

Edna Ward, Ph.D.
College of Business
Administration



MEETING ABSTRACTS

IMPROVING STUDENTS' PERCEIVED SELF-EFFICACY
REGARDING RELATIONAL DATABASES USING BIBLIOGRAPHIC
SOFTWARE. DEZENDORF, P. K., MANETTA, A. A., AND JENKINS, T. L.
Presented at the 22nd Annual Baccalaureate Social Work Education
Conference, November 3-7, 2004

Student: Tracy Leigh
Jenkins (2005)
Faculty Mentor: Paul
Dezendorf, Ph.D., MSW, MBA
Department of Social Work

BSW graduates face increased competition and higher demands from agencies. In particular, technology competency now is a large factor in hiring and promotion decisions. Within agencies, greater importance is now placed on the ability to efficiently retrieve relevant data in a useful manner as agencies face a growing burden of increased size of databases, increased complexity, and need for faster extraction and description of that information. The presentation describes how to increase student competencies and professionalism by improving perceived self-efficacy regarding relational databases using bibliographic software as a teaching aid. The approach is based on Rogers's innovation diffusion theory and focuses on increasing students' perceived self-efficacy in an Introduction to Social Work course.

ANTIFEEDANT EFFECT OF ASIMINA TRILOBA EXTRACT ON
SOUTHERN GREEN STINK BUGS
Presented at the Southeastern Branch Meeting of the Entomological Society
of America, March 7, 2005
Presented to the Department of Biology Winthrop University, April 6, 2005

Student: Clarence
Francis (2005)
Faculty mentor: Paula
Mitchell, Ph.D.
Department of Biology

Plants in the family Annonaceae have been used for medicinal purposes by many different Native American cultures as part of their folk medicine. This study was directed at the possible antifeedant effect of *Asimina triloba* (pawpaw) seed and leaf extract against the South Carolina crop pest *Nezara viridula* (Hemiptera: Heteroptera: Pentatomidae). Southern green stink bugs were subjected to a no choice test with a food source dipped in a 5% concentration of pawpaw leaf extract for a 24-hour period. In a second test southern green stink bugs were offered a choice between feeding on one half of a peanut dipped in control solution or on the other half of the peanut that was dipped in a 5% seed extract. After a 24-hour feeding period, the peanuts were stained with acid fuchsin so that salivary deposits could be counted. At a 5% concentration, *Asimina triloba* seed extract reduced feeding by *Nezara viridula* when compared to the distilled water control group; leaf extract did not reduce feeding activity in two of the three test

trials conducted. These results indicate that *Asimina triloba* seed extract may be useful in pest control.

THE MELANCHOLY MERCHANT AS A HOMOSEXUAL

Presented at the National Conference on Undergraduate Research, April 22, 2005.

Scholars have long discussed the nature of Antonio's melancholy in Shakespeare's *The Merchant of Venice*. Some argue that Antonio's unexplained melancholy stems from his unsuccessful commercial investments. Others maintain, however, that it is directly related to Antonio's unrequited homoerotic feelings for his friend, Bassanio. My main argument proposes that Antonio's refusal to reveal the source of his melancholy suggests that he is ashamed of what has stirred up such sadness in him. I suggest that it is shame of homosexual affection that makes Antonio reluctant to reveal the source of his melancholy. At first glance, the relationship between Antonio and Bassanio appears to exemplify the Renaissance ideal of male friendship. But since its main principle, intellectual connectedness, is absent in Antonio and Bassanio's relationship, they do not share a relationship that is strictly based on Renaissance ideals. In fact, the absence of physical intimacy between Antonio and Bassanio supports my thesis that Antonio's melancholy is directly caused by his unrequited homoerotic feelings for Bassanio. Certainly, Richard Burton's references to unrequited love as a cause of melancholy in his *The Anatomy of Melancholy* support such a theory. Additional evidence can be found in the relationship between Antonio and his friends Solanio and Salerio. When Bassanio arrives at the scene, Solanio and Salerio know to leave him alone with Antonio. The relationship between Antonio and Bassanio is exclusive. If it were merely platonic, Antonio would treat his other friends with the same affection. Nonetheless, whether Bassanio shares Antonio's homoerotic feelings is debatable. Antonio is isolated at the end of the play, when Bassanio chooses heterosexual love over homosexual love. Bassanio feels indebted to Antonio but primarily because the former has always helped him out of his financial troubles. In conclusion, I suggest that Antonio's melancholy is directly linked to his homosexual feelings for Bassanio. This theory has not been accepted as a factual explanation because Antonio makes no direct declaration of homosexual love for his friend. Nevertheless, my paper sets out to use Antonio's silence regarding the cause of his melancholy as evidence to support the notion that he has homosexual feelings for Bassanio.

Student: Eva Hund (2005)
Faculty Mentor: Matthew
Fike, Ph.D.
Department of English

THE BEST INTERESTS OF THE CHILD: LEGAL, SCIENTIFIC, AND ETHICAL PERSPECTIVES

Presented at the South Carolina Psychological Association Annual Convention, April 2005

Student: Jessica J.
Hudgens (2006)
Faculty mentors: Timothy
Daugherty, Ph.D., Lois J.
Veronen, Ph.D.
Department of Psychology
Thomas McDow, J.D.,
Rock Hill Attorney

Child custody evaluations are among the most complex forensic activities for a psychologist (Otto, Buffington-Vollum, & Edgens, 2003). The prevailing legal standard in custody cases is "the best interests of the child." While the intent of the standard is evident, its operational definitions may not be clearly articulated in some cases. Brodzinsky (1993) argues that, too often, psychologists stretch the use of tests beyond the support of extant research. A test found to be valid for one use (e.g., clinical diagnosis) may yet not be valid for a different use (e.g., predicting the outcomes that might flow from various custody arrangements). Still, both judges and attorneys rate psychological evaluations as the most useful form of evidence in custody cases (Bow & Quinnell, 2004). The legal, scientific, and ethical parameters of the best interests standard will be reviewed.

CLONING AND EXPRESSION OF RECOMBINANT ADIPONECTIN MEMBRANE RECEPTOR 1 IN Sf9 INSECT CELLS

Presented to the Department of Chemistry, Winthrop University, December 9, 2004
Presented at the South Carolina Academy of Science Meeting, March 16, 2005
Presented at the National Conference on Undergraduate Research, April 21, 2005
Presented at the Association of Biochemistry and Molecular Biology Conference, April 2, 2005

Student: Lavonda C.
Walker (2005)
Faculty Mentor: Chasta
Parker, Ph.D.
Department of Chemistry,
Physics, and Geology

Adiponectin, a hormone released from adipose tissue, has been linked to insulin-sensitizing properties, which is an important factor in individuals plagued with diabetes and obesity. This hormone is attributed to enhancing the uptake of glucose into skeletal muscle. Adiponectin circulates in human plasma at significantly lower levels in obese individuals as compared to non-obese individuals. The cDNA of one adiponectin receptor, AdipoR1, has been sub-cloned into a pIEx-4 vector. In a collaborative research project, a recombinant vector containing AdipoR1 was transfected into E.coli. However, results indicated a low yield of protein expression. Consequently, an alternate expression system, Sf-9 insect cells, will be utilized for transfection. Once expression in the insect cells is achieved, purification of the receptor protein will be performed using Ni-NTA affinity resin as the first step. Subsequent research will involve structural analysis of AdipoR1 to determine its cell signaling and binding mechanisms. Further understanding of the sub-cellular mechanisms of this receptor could aid in the discovery of inhibitory therapies that would increase insulin sensitivity, thus proving a remarkable breakthrough for obese and diabetic individuals.

USING STUDENT PERCEPTIONS TO RECRUIT AND SERVE HONOR SOCIETY MEMBERS.

Presented at the Southeastern Psychological Association Conference, April 2005

One hundred men and women were surveyed in undergraduate classes. The survey solicited information about honor society recruitment and membership. The general perceptions of honor society membership were positive. The majority of students agreed that most students want to be honor society members. African-American students agreed more strongly than Caucasians. When asked to list adjectives that describe honor society members, the most frequent responses were 1) intelligent, 2) motivated, and 3) determined. Ninety percent of students agreed that being an honor society member will increase their chances of getting into graduate school (which 86% of students planned to do). Participants felt that students do not join honor societies because of the time commitment and expense. Most students reported that they would feel guilty joining without being active. Interestingly, non-members were more likely than members to agree that participation was an obligation, as did the non-employed over the employed. Men were more concerned than women about the cost of joining. Although cost was a concern, the majority of students felt that the benefits were worth the cost, with members agreeing more than non-members. The most common benefits reported were 1) learn about the field, 2) networking, 3) personal satisfaction, and 4) service opportunities. Underclassmen viewed making friends as a more important benefit than did upperclassmen. Few students recognized financial resources or professor recognition as benefits. Women and high achieving students were most positive about the benefits. For example, women were more likely to agree that honor society membership would help them get into graduate school, give them confidence about their careers, and help them find faculty mentors. The higher the GPA, the more the student agreed that membership would feel like an accomplishment, help them feel confident about their careers, and increase their future earnings. These results indicate that sub-groups respond to different recruitment tactics and that certain membership benefits are less known. These findings may enable officers and advisors to better understand, recruit, and satisfy members.

Student: Shannon
Dixon (2005)
Faculty Mentor: Merry
Sleigh, Ph.D.
Department of Psychology

AMATEURISM VERSUS MERITOCRACY: COLLEGE FOOTBALL, ETHNICITY, AND ASSIMILATION IN THE 1920S AND 1930S

Presented at the National Conference on Undergraduate Research, April 23, 2005

Stan Zuk entered Columbia University in 1931 despite his average high school record and status as the son of working-class Ukrainian immigrants. Zuk was recruited by this elite school entirely because of his athletic prowess. Yet within two years, he returned home to Buffalo, a victim of

Student: Robert Dew (2004)
Faculty Mentor: Andy
Doyle, Ph.D.
Department of History

the continuing controversy over professionalism in intercollegiate football. His story sheds light on issues of class and ethnicity in a nation that was undergoing rapid changes due to the immigration of southern and eastern Europeans around the turn of the twentieth century. American nativists greeted them with disdain and hostility, relegating most of them to menial jobs. Stan Zuk's parents were among this group of so-called "new immigrants," but like many second-generation Americans, their son used football as a means of assimilation into the American social and cultural mainstream. Zuk played on Columbia's freshman football team. He was forced to leave school in his sophomore year because of the national scandal sparked by the Carnegie Foundation report on illegal payments made to college athletes. College football was born in the 1870s, when fewer than two percent of Americans attended college. The strict rules of amateurism prohibited athletic scholarships as a means of enforcing class exclusivity in intercollegiate athletics. If you were too poor to pay for college, you were not a "gentleman" and therefore ineligible. Those rules were designed to keep young men like Zuk out. This desire for class and ethnic exclusivity was quickly undermined by the desire to win games, so schools began to recruit players from outside the elite. Alumni and administrators gave these players academic scholarships or, as in Zuk's case, campus jobs. When Columbia officials decided to clean up their image in the early 1930s, Zuk became expendable. He moved to South Carolina and was elected to the South Carolina Sports Hall of Fame for his years of coaching football at a Methodist orphanage. This paper examines how his experience as an athlete at Columbia reveals larger issues of class, ethnicity, and immigrant assimilation.

REPRODUCTION OF RECOMBINANT C8₂ MACPF IN SF9 INSECT CELLS
 Presented at the American Society of Biochemistry and Molecular Biology,
 April 2-6, 2005
 Presented at the National Conference on Undergraduate Research, April 23, 2005

Student: Vennece
 Fowlkes (2005)
 Faculty Mentor: Chasta
 Parker Ph.D.
 Committee Members:
 Takita Sumter, Ph.D. and
 Harold Arvidson, Ph.D.
 Department of Chemistry,
 Physics, and Geology

The complement system is composed of over 35 proteins, enzymes, and regulatory molecules that work in conjunction with the immune system to destroy and remove foreign substances (i.e. bacteria, virally infected particles, fungi, and parasites) from the body. The principal objective of this project is to produce a highly purified recombinant form of the putative membrane-binding region (MACPF) of the 64 kDa C8₂ subunit of the eighth component of human complement (C8). C8 is an oligomeric protein made up of three non-identical subunits, C8a (64 kDa), C8b (64 kDa), and C8γ (22 kDa). The C8a and C8γ subunits are covalently bonded through a disulfide bond while C8b is non-covalently associated with C8a. C8a and C8b are homologous to one another and together with C6, C7, and C9 comprise

the MAC protein family. The MACPF is considered to be self-folding, is ~ 43 kDa in size, and contains two disulfide bonds and no carbohydrates. Experiments to sub-clone the MACPF region into a pIEx-4 vector have been done; however, the sequence needs to be confirmed to insure proper ligation of the desired insert. After the sequence is confirmed, the DNA will be transfected into Sf9 insect cells. This work was supported by SC-BRIN/EPSCoR CRP grant and Winthrop University.

MEASUREMENT OF WORKING ALLIANCE IN COLLEGE ADVISING

Presented at the South Carolina Psychological Association Annual Convention, April 2005

It has long been recognized that technique alone does not drive success in psychotherapy; rather, the working alliance formed between the therapist and patient is also a critical determinant of outcomes. The relationship between an undergraduate advisor and student advisee may similarly be examined using the working alliance construct. Through the undergraduate advisory relationship, students articulate goals, identify tasks, and develop identity. The Advisory Working Alliance Test (AWAT) was developed and administered to undergraduate students. The ten item scale had high internal consistency (.93) and a low correlation with the Marlowe-Crown Social Desirability Scale (.18). As expected, AWAT scores were significantly related to self-efficacy and post graduation plans.

Students: Sarah J. Webster (2006), April D. Howe (2005), Laila A. Bell (2006), Christina H. Dempsey (2005), Desirae N. Walker (2006)
Faculty Mentor: Timothy Daugherty, Ph.D.
Department of Psychology

RELATIONSHIP OF PERCEIVED PARENTING STYLES AND SOCIAL ANXIETY

Presented at Southeastern Psychological Association Conference, April 2005

Of the many environmental factors that impact the life of an adolescent, parenting plays a key role. Previous studies have assessed how family-adolescent interactions correlate to such dimensions of the adolescent's interpersonal relationships in society as self-monitoring and social competence (Schoenrock, Bell, Sun, & Avery, 1999), locus of control orientation and self-concept (McClun & Merrell, 1998), goal orientations (Gonzalez, Greenwood, & Wenhsu, 2001), childhood attachment patterns and intimate relationships (Neal & Frick-Horbury, 2001), emotional autonomy and school achievement (Mcbride-Chang & Chang, 1998), temperament and self-regulation (Manian, Strauman, & Denney, 1998), and loneliness (Uruk & Demire, 2003). In this study we examined the correlation of three parenting styles (authoritarian, authoritative, and permissive) with social anxiety. We hypothesized that authoritarian parenting styles would be related to high social anxiety. Our participants were college students in a small southeastern university from upper and lower level psychology classes as well as a few non-psychology students.

Students: Sarah Webster (2006), Shannon Dixon (2005), and Rachel Martin (2006)
Faculty Mentor: Darren Ritzer, Ph.D.
Department of Psychology

There were 171 participants, 49 men and 122 women. Ethnically there were 105 Caucasians, 54 African Americans, 4 Asians, 2 Native Americans, 2 Hispanics, and 3 of mixed or other backgrounds. We surveyed these participants using the Social Avoidance and Distress Scale, or SAD, to measure social anxiety (Watson & Friend, 1969) and a modified version of the Parental Authority Questionnaire, or PAQ, to measure the participants' perceptions of their parents' styles (Buri, 1991). We found that our hypothesis was not supported, yet there was a negative correlation between authoritative parenting and social anxiety for both mother figures and father figures. For mother figures $r = -.207$, $p < .01$, and for father figures $r = -.205$, $p < .01$. These results signify that the authoritative parenting style is related to lower social anxiety, which means that this parenting style is consistent with having a college student that is more socially adept than a college student raised with another parenting style. By determining what aspects of parenting lead to the least amount of social anxiety, we can better understand how parents can best socialize their offspring to be productive members of society.

AN ANIONIC POLYTHIOPHENE AS A WATER-SOLUBLE FLUORESCENT SENSOR

Presented at the South Carolina Academy of Science Meeting, March 16, 2005.

Student: Michelle
Wood (2005)
Faculty Mentor: Robin
Lammi, Ph.D.
Department of Chemistry,
Physics, and Geology

Anionic conjugated polymers are promising cation sensors, offering bright fluorescence and superior fluorescence-quenching response upon analyte binding, due to highly efficient intramolecular energy transfer along the polymer chain. We have investigated the sensing capability of a commercially available polythiophene, poly[2-(3-thienyl)ethoxy-4-butylsulfonate] ($M_w = 1,000,000$ g/mol), in aqueous solution, using methyl viologen (MV2+) as quencher. A detection limit of 5.0×10^{-8} M methyl viologen was determined for polymer solutions $\sim 10^{-4}$ M in monomers. In studies with varying concentrations of SSC buffer, increasing buffer-ion concentration resulted in decreased quenching efficiency. This confirmed that quenching occurs by a static mechanism, involving ground-state polymer-ion complexation. Stern-Volmer kinetic analysis yielded a KSV value of 2.0×10^6 M⁻¹, similar to the published value for a related polythiophene. Unfortunately, poor polymer solubility limited sensitivity. Addition of the cationic surfactant CTAB resulted in a 6-fold increase in polymer fluorescence intensity and a narrowed, blue-shifted polymer absorption spectrum, suggesting that interaction with surfactant helped to break up polymer aggregates. The polymer-surfactant solution showed a weak quenching response to methyl viologen ($K_{SV} = 7.0 \times 10^1$ M⁻¹), as the surfactant prevented polymer-MV2+ binding. Future efforts will focus on related polymers with different side chains to improve solubility.

RELATIONSHIP BETWEEN SELF-PERCEPTIONS AND DATING STATUS

OF WOMEN. DILLARD, C.A., FIRTKO, E.A., EDGAR, D.E., CROFT, T.L.,
YARBOROUGH, R.L. & RITZER, D.R.

Presented at the National Conference on Undergraduate Research, April 21, 2005

Presented at the Southeastern Psychological Association Conference, April 2005

Few researchers have studied how being in a romantic relationship affects self-perceptions, specifically for women. In this study we examined women's self-perceptions as they relate to their dating status. We studied whether or not a woman's self-perceptions change when she is romantically involved, and if there is a significant difference between the self-perceptions of those who have been dating six months or more, and six months or less. For the purpose of our study, thirty-five women (80% Caucasian; 20% African American) pursuing their undergraduate degree were surveyed with the "Self-Perceptions Survey" created by the researchers. This survey measured women's self-perceptions in the areas of physical attractiveness, self-worth, and general happiness. Responses were made on a Likert scale, with 1 representing "strongly agree," and 4 representing "strongly disagree." Using Pearson's correlations and independent samples t-tests, we found no significant difference between the self-perceived scores as they relate to relationship status. A positive correlation was found between self-reported scores of happiness and self-worth ($r(35) = .658, p < .05$).

It is a widely held belief that the single woman is sad and lonely, lacking self-worth until she finds a romantic partner. In general our findings suggest that, despite the popular stereotype for women, women are not defined by a relationship. On the contrary, a woman's self-concept and self-esteem come from other facets of her life. Future research may want to look at what areas in particular from which women do in fact derive their self-esteem and self-concept.

HUMOR, ANXIETY AND ALIENATION

Presented at the South Carolina Psychological Association Annual Convention, April 2005

Based on earlier research (Shockley et al., 2004), the first item of the Revised Humor Styles Questionnaire was edited and the resulting scale was subjected to psychometric analysis. The HSQ-R, while half the length of the original HSQ, maintains moderate subscale integrity. Subscales bore low to moderate correlations with the Marlowe-Crowne Social Desirability Scale. Relationships with trait anxiety and social alienation were as predicted. Results will be discussed in terms of the functions of humor.

Student: Christie

Dillard (2005), Elizabeth

Firtko (2004)

Faculty Mentor: Darren

Ritzer, Ph.D.

Department of Psychology

Students: Jeremy B.

Shockley (2004), Renee

N. Grande (2006), Jon S.

Wilson (2005), Ashley E.

Powell (2006), Samantha D.

Millen (2005)

Faculty Mentor: Timothy

Daugherty, Ph.D.

Department of Psychology

BODY IMAGE PERCEPTIONS OF AFRICAN AMERICAN FEMALES
AT SOUTH CAROLINA STATE UNIVERSITY. JESSICA LANE, DANIEL
LACKLAND, JILL ABELL, THEODOSHA GILLIARD

Presented to the Medical University of South Carolina, August, 2004

Presented to the Department of Biology, Winthrop University, November 17, 2004

Student: Jessica Lane (2005)

Faculty Mentor: Daniel

Lackland, Ph.D.

Medical University of

South Carolina

Obesity is an increasing trend among children and adults of all ages and races. This has led to increased negative body image perceptions because of the emphasis placed on thinner bodies and negative stereotypes placed on heavier bodies. Body perception and weight issues have a role in determining self-worth and self-esteem. This study assesses body size and body image perceptions in a population of young adults. The hypotheses are: 1) Females who are larger will demonstrate a lesser degree of satisfaction with their body shape than the smaller female, and 2) Females will prefer a body image of a member of the opposite sex to be similar to the image of their fathers. This project used data from the Annual Student Health and Behavior Survey administered at South Carolina State University in 2003 that focused on gender, age, race, weight, height, perceptions of body image, perceived image of desired body shape, preferred body shape of member of opposite sex, and body shape of father. Body image perceptions were self-reported using 9 pictures of females and males ranging from underweight, normal weight, overweight and obese. Women used the female shapes to tell where their current body shape was and where they would like their current body shape to be. They also indicated how females of a certain BMI classify themselves and what body shape they think is attractive on a male. Responses from 248 African American females were used. Only 6% are underweight. The majority of people in this survey are normal (56%), but 22.5% are overweight, and 15% are obese. 32% or 45/140 of the normal weight people, 68% or 38/56 of the overweight, 76% or 29/38 of the obese, and 45% of the total population are trying to lose weight. Even though these women are trying to lose weight, studies have shown that African American women have more positive body images than other races. Hypothesis 1 is accepted since overweight and obese females are trying to lose weight. Only 22% of the people surveyed would prefer a male with similar body shape to their fathers.

FLUORESCENCE DETECTION OF NICKEL(II) AND INVESTIGATION OF
NICKEL—CATALASE BINDING

Presented at the South Carolina Academy of Science Meeting, March 16, 2005

Student: Shakena Daniel (2006)

Faculty Mentor: Robin

Lammi, Ph.D.

We are interested in applications of fluorescent sensors for biologically significant metal ions. Recently, we have been working with calcein, the fluorescent dye, which is known to coordinate transition-metal ions such

as Cu(II) and Ni(II), leading to formation of non-fluorescent complexes. Fluorescence measurements on dilute ($\sim 10^{-6}$ M) calcein solutions with varying Ni(II) concentrations (0 - 10^{-6} M) confirmed that each dye molecule coordinates one nickel ion (detection limit $<10^{-7}$ M) and showed that 1:1 dye-ion stoichiometry results in nearly complete fluorescence quenching. Stern-Volmer kinetic analysis and results of quenching measurements on solutions with varying concentrations of SSC buffer revealed that quenching is dependent only on ground-state complexation, and does not occur when ions collide with excited dye molecules. Quenching-recovery experiments were also performed using "quenched" equimolar calcein-nickel(II) solutions and added catalase, in order to quantify binding between this important enzyme and the inhibitor, Ni(II). Catalase addition leads to preferential Ni(II)-enzyme binding and recovery of calcein fluorescence. The extent of recovery suggests that binding occurs at numerous sites, likely including multiple His residues. Continued study may permit more detailed understanding of metal binding in this and other biomolecules.

Department of Chemistry,
Physics and Geology

MYOCARDIAL PROFILES OF MATRIX METALLOPROTEINASES AND TISSUE INHIBITORS OF MATRIX METALLOPROTEINASES IN CHRONIC PRESSURE OVERLOAD.

SHENIKQUA BOUGES, G. PATRICIA ESCOBAR, DANIELLE K. GOSHORN, ELIZABETH HAPKE, JENNIFER W. HENDRICK, JEFFREY A. SAMPLE, JULIE E. MCLEAN, SARAH E. SWETERLITSCH, CARSON S. WEBB, MICHAEL R. ZILE, FRANCIS G. SPINALE, AND MERRY L. LINDSEY
Presented to the Medical University of South Carolina, August 6, 2004.
Presented to the Department of Biology, Winthrop University,
November 17, 2004

Hypertension is a serious illness that affects a large number of Americans over the age of 55. Hypertension creates pressure overload on the left ventricle (LV) and can lead to major cardiovascular complications, including congestive heart failure (CHF). The initial LV response to pressure overload involves LV remodeling that allows the LV to increase in size (hypertrophy). LV remodeling that continues after this stage is adverse and directly contributes to the development of CHF. The exact mechanisms whereby pressure overload leads to hypertrophy and then to the development of CHF remain unclear. During LV remodeling, changes occur in the extracellular matrix (ECM) that have been shown to alter LV function. Matrix metalloproteinases (MMPs) are a family of ECM-degrading enzymes with demonstrated roles in LV remodeling. Using a chronic pressure overload model that involves transverse aortic constriction (TAC) in mice, we tested the hypothesis that alterations in

Student: Shenikqua
Bouges (2005)
Mentor: Merry Lindsey,
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South Carolina

specific MMPs and TIMPs occur in response to chronic TAC. We measured levels of MMPs 3, 7, 8, 9, 12, 13, and 14 and levels of tissue inhibitors of metalloproteinases (TIMPs) 1, 2, 3, and 4 in the LV of young unoperated mice (n=24), middle-aged unoperated mice (MA; n=18), and MA mice that had undergone TAC 12 months previously (MA+TAC). LV mass increased in both MA (106±4 mg; p=0.02) and MA+TAC (116±11 mg; p=0.01) groups, compared with young controls (89±4 mg). LV samples were homogenized and separated into soluble and insoluble fractions for immunoblotting. In the soluble fraction, MMP-3 decreased and MMP-7 and TIMP-1 increased in TAC, compared to both unoperated groups. Soluble MMP-12 decreased in MA+TAC, compared to MA. In the insoluble fraction, TIMP-4 decreased in MA+TAC, compared with MA. Overall, soluble MMP and TIMP levels were increased and insoluble TIMP levels were decreased. These results identify specific MMPs and TIMPs that are altered by chronic pressure overload and suggest targeting strategies to limit LV remodeling in response to hypertension.

WE WANT YOU TO DO IT, BUT WE DON'T WANT TO SEE IT: MEDIA REPRESENTATIONS OF BREASTMILK AND BREASTFEEDING

Presented at the South Carolina Political Science Association Meeting, February 26, 2005

Presented at the Western Political Science Association Meeting, March 17-19, 2005

Student: Renée
Capstraw (2006)
Faculty Mentors: Karen
Kedrowski, Ph.D. and
Michael Lipscomb, Ph.D.
Department of Political Science

Over the past decade, breastfeeding has become a publicly debated issue. Consequently, a mother's right to breastfeed, or a child's right to be breastfed, in a public places has become a civil rights issue in much of the United States. Currently thirty-four states have some form of protective breastfeeding legislation. Legislation and civil rights usually arise under curtain social contexts and atmospheres. This paper serves as one study into the social context surrounding breastfeeding. The paper is a media study using eighteen different media sources: eleven women's magazines, four newspapers, and three television networks. Stories involving breastfeeding were collected dating from 1990 to 2004. Our findings show that the media has a generally positive yet mixed message about breastfeeding and that the various media types present breastfeeding differently to the public. At the same time, we find significant evidence of "disembodied motherhood," whereby the medical and emotional benefits of breast milk are reported, without any discussion of the physical demands of breastfeeding. Similarly, television news and newspaper stories use medical doctors, scientists, and government officials as sources in their stories, while mothers' expertise and experiences with breastfeeding appear only in women's magazines.

DESEGREGATION, DESCRIPTIVE REPRESENTATION, & ELECTORAL STRUCTURES: A STUDY OF SOUTH CAROLINA PUBLIC SCHOOL DISTRICTS

Presented at the Annual Meeting of the South Carolina Political Science Association, February 26, 2005

Earlier versions of this paper were presented at the Annual Meeting of the Southern Political Science Association, January 6, 2005

This paper provides a preliminary analysis of the extent to which there is a relationship between the way school board members are chosen in South Carolina's school districts and the level of between-building desegregation in these districts. Methods for selecting school board members in South Carolina vary considerably; however this study includes for the most part only those districts where members are elected at-large, through single-member-districts (SMD), or some hybrid of the two. School desegregation levels are measured by the dissimilarity index, which is the proportion of a district's students that would have to be moved to ensure that the racial composition of each school in the district would be the same as the racial composition of the entire district. The variations in school board electoral structure and the dissimilarity index together allow us to investigate two research questions. First, to what extent are variations in electoral structure associated with variations in black descriptive representation on South Carolina school boards? Second, to what extent are variations in electoral structure associated with variations in black substantive representation as indicated by the dissimilarity index? We hypothesized that in school districts where all or a majority of school board members are elected from SMDs, blacks will have greater descriptive and substantive representation. With regard to descriptive representation, we found no statistically significant differences between SMD, hybrid, or at-large systems. In terms of school desegregation, our results were the opposite of our expectation that SMDs would be associated with greater levels of school desegregation. However, this finding is a preliminary one because an adequate investigation of the hypothesis' validity requires considerable additional research.

WHY IS THE SKY BLUE? AN UNDERGRADUATE LASER LIGHT-SCATTERING EXPERIMENT

Presented at the South Carolina Academy of Science Meeting, March 16, 2005.

We have developed an undergraduate laboratory experiment to investigate Rayleigh scattering, scattering by particles much smaller than the wavelength of light. Using a tunable krypton/argon laser, a modular fiber-optic spectrometer and commercially available latex spheres, students will study the effects of wavelength and particle concentration on scattering

Student: Manning B.

Shaw, III (2006)

Faculty Mentors: Karen

Kedrowski, Ph.D. and

Stephen Smith, Ph.D.

Department of Political
Science

Student: Kyle Dukes (2007)

Faculty Mentor: Robin

Lammi, Ph.D.

Department of Chemistry,
Physics, and Geology

intensity. Through straightforward data acquisition and graphical analysis, they will determine that scattering intensity depends linearly on particle concentration and varies with (wavelength)⁻⁴, as predicted. In addition to demonstrating the experimental foundation for the Rayleigh scattering model, this experiment will reinforce concepts related to color and light-particle interactions and give General Chemistry (or General Physics) students hands-on experience with laser technology rarely encountered in undergraduate courses.

UNDERSTANDING PHOTOSYNTHESIS: AN UNDERGRADUATE LABORATORY ON THE EXTRACTION, SEPARATION AND OPTICAL SPECTROSCOPY OF PIGMENTS FROM SPINACH LEAVES

Presented at the South Carolina Academy of Science Meeting, March 16, 2005.

Student: Joseph
Goodwin (2006)
Faculty Mentor: Robin
Lammi, Ph.D.
Department of Chemistry,
Physics, and Geology

We have developed a two-week undergraduate laboratory experiment in which Introductory Inorganic Chemistry students will investigate the early light-absorption and energy/electron-transfer events in photosynthesis. Students will extract and chromatographically separate carotenoids and chlorophylls from fresh spinach leaves. They will then examine the pigments' photophysics, appreciating (1) the efficient absorption of visible sunlight accomplished by plant pigments and (2) the energy- and electron-transfer processes between the antenna complex and reaction center and between the reaction center and primary electron acceptor. In addition to providing a chemical, molecular view of photosynthesis, this experience will allow students to apply and integrate several course concepts, including biological electron transfer (oxidation-reduction) and roles of metal ions in biology. Finally, it will introduce students to a number of experimental techniques, including extraction, thin-layer and column chromatographic methods, and UV-visible and fluorescence spectroscopies.

SOUTH CAROLINA'S DISCREPANCIES IN OFFICIAL DEATH TOTALS DURING THE SPANISH INFLUENZA PANDEMIC OF 1918.

Presented at the National Conference on Undergraduate Research, April 23, 2005.

Student: C. Jeanie Sherer (2005)
Faculty Mentor: Andrew
Doyle, PhD.
Department of History

Research into the Spanish influenza epidemic of 1918 has shown that county public health officials under-reported the death toll by as much as 50%. This paper will provide evidence that this pattern of under-reporting held true in many South Carolina counties. An example of this discrepancy is York County. The current official count for York County shows twelve deaths from influenza for the month of October 1918; death certificates containing the word influenza show the total to be 186 deaths. The research will show not only the difference in official totals and death certificates but unreported rural deaths. Persistent southern poverty can explain some

of this under-reporting, with the poor quality of the state health care programs and the inadequate system of reporting vital statistics. Southern race, class, and urban and rural disparities are also explanatory factors. The Native Americans officially had no influenza deaths but in actuality had over twenty-five, and the African Americans were systematically denied proper health care as were the poor White rural sharecroppers. This research will explain the different reasons death totals were under-reported or not reported and will attempt to show a more realistic count for South Carolina.

IDENTIFICATION OF DIFFERENCES AMONG THREE LYCOPERSICON SPECIES BY MTRAPD

Presented at the South Carolina Academy of Science Meeting, March 16, 2005

Presented at the National Conference on Undergraduate Research, April 22, 2005

The Lycopersicon genus is comprised of the cultivated tomato, *L. esculentum*, and several closely related wild species that differ in fruit color and their ability to be easily crossed with *L. esculentum*. My project compares the mitochondrial (mt) DNA of the *L. pennellii*, *L. peruvianum*, and *L. esculentum*, to determine the relative rates of change in the Lycopersicon genus. MtDNA was amplified by using primers for the mitochondrial gene *rps12* and the nuclear 25s rRNA to assess the purity of the mtDNA by making sure there is no contamination of nuclear DNA. To compare the mt structures, the mitochondrial-specific randomly amplified polymorphic DNA (mt RAPD) method was used that was developed by this lab (Gianniny et. al. 2004). Jaccard's genetic similarity formula was used to detect the percent difference between species using the mtRAPD profiles. This data shows that the mt genomes of *L. esculentum* and *L. pennellii* are 41.9% genetically similar, *L. esculentum* and *L. peruvianum* are 45.9% genetically similar, and *L. pennellii* and *L. peruvianum* are 47.8 % genetically similar. We are using these findings to access the relative rates of change in the Lycopersicon cytoplasmic male sterility (CMS), since CMS is due to recombination events in the mitochondrial genome.

Student: Matthew

Griffin (2005)

Faculty Mentor: Dwight

Dimaculangan, Ph.D.

Department of Biology

THE RELATIONSHIPS AMONG GENDER, DISABILITY TYPE, AND PREJUDICE LEVELS.

Presented at the Southeastern Psychological Association Conference, April 6-9, 2005

The 1990 Rehabilitation Act defines an individual with a disability as a person who: has a physical or mental impairment that substantially limits one or more major life activities; has a record of such an impairment; or is regarded as having such an impairment (<http://adata.org/whatsadadefinition.html>). Previous research has shown that prejudice and misunderstanding exist against handicapped individuals (Weinberg,

Students: Mona Badr

(2006), Lauren King (2007),

Kimberly Johnson (2007)

Faculty Mentor: Darren

Ritzer, Ph.D.

Department of Psychology

1976). This study explored the attitudes non-handicapped persons have towards physically handicapped versus mentally handicapped persons. Participants were 62 college students that completed a survey in class or on campus. We hypothesized that non-disabled individuals would be more supportive towards the physically handicapped than the mentally handicapped. Participants were 12 men and 49 women recruited from random classes and around the campus. Students were given surveys adapted from a pre-existing survey called The General Attitudes Toward People With Disabilities Scale (Antonak, Livneh, & Yucker, 1998). Two forms of the survey were given randomly. Both forms were the same questions with the only changes being between “mentally” for the mentally handicapped survey, or “physically” for the physically handicapped survey. The results of this study showed that there was an overall significant difference between how supportive individuals are of physically vs. mentally handicapped. In general, people were more supportive of physical handicaps than of mental handicaps, and males were least supportive of mental handicaps.

INVESTIGATION OF SOME NOVEL LITHIUM MANGANESE OXIDE BASED CATHODE MATERIALS FOR USE IN LITHIUM ION BATTERIES. Presented at the 229th American Chemical Society National Meeting, March 14, 2005 Presented at the South Carolina Academy of Science Meeting, March 16, 2005

Student: Deon Omar
Dash (2005)
Faculty Mentor: Lennart
Kullberg, Ph.D.
Department of Chemistry,
Physics, and Geology

The LiMn_2O_4 spinel is one of the most promising cathode materials for rechargeable lithium batteries because of its low cost, low toxicity, and high energy density. Recent studies have focused on the problem with capacity fading of this material upon repeated cycling. Partial substitution of manganese ions for other metal ions such as Mg^{2+} and Ni^{2+} have been shown to improve cycling. Unfortunately, doping with low valent cations decreases the capacity due to decrease in the amount of Mn^{3+} in the spinel. In the present study, we prepared aluminum and cobalt substituted materials of composition $\text{Li}_{1+x}\text{Al}_x\text{Co}_x\text{Mn}_{2-3x}\text{O}_4$ ($x = 0.02, 0.03, 0.04, \text{ and } 0.05$) and studied their electrochemical properties. Cobalt and aluminum doped lithium manganese oxide compounds were synthesized using high temperature solid-state synthesis. The products were characterized by powder X-ray diffraction (XRD). The XRD data showed that the only phase present was the expected LiMn_2O_4 . The lattice parameters indicate that each compound is a solid solution with cobalt and aluminum replacing part of the manganese in the crystal lattice of LiMn_2O_4 . Electrochemical evaluation of the materials as cathodes in lithium ion cells was performed. The cells gave high discharge voltages (~ 4.0 V) and high discharge capacities during the first cycle. The cathode

with the highest amount of aluminum and cobalt showed good stability during the first 30-40 cycles. A study of the long-term stability upon repeated cycling is in progress.

CREATION OF A GOAL ORIENTATION MEASURE RELATED TO TRAINING TRANSFER.

Presented at the Southeastern Psychological Association Conference, April 2005

Presented at the Conference of Applied Psychology, August 2004

The present study focused on creating an original survey to measure training transfer, for use in subsequent research. Transfer is when employees take the knowledge, skills, and attitudes from training and apply it to their jobs over time. We were particularly interested in developing a survey to measure the established construct of goal orientation in relation to transfer. Goal orientation refers to the type of goal an individual adopts when approaching a task. Previous research has demonstrated that goal orientation measures may function differently if they are oriented toward different domains (e.g., classroom performance vs. work performance; see Horvath, Scheu, & DeShon, 2004). However, a transfer-specific goal orientation measure has not been created. Therefore, the purpose of the present study was to evaluate the psychometric characteristics of a transfer-specific goal orientation scale, and to explore its relationships with other variables typically measured in transfer of training research (intent to transfer and self efficacy). Participants were 24 undergraduate students, surveyed in a classroom setting. We created a survey to measure factors that influence transfer of their classroom training to the real world setting. For example, the survey contained 3 subscales of goal orientation (i.e., MGO, PGO, AGO) revised from Horvath, Scheu, and DeShon (2001) to refer specifically to a transfer of training situation. The survey also measured participants' intent to transfer current skills learned in the classroom to future situations. Each of the scales had adequate reliability. The alphas for all of the scales were above 0.65. In addition, all of the items had reasonable means and standard deviations. One item in the self-efficacy construct could be deleted to bring the alpha for that construct from 0.70 to 0.87. However, additional testing is needed to see whether this change would be theoretically appropriate. The major contribution of the current study is the creation of a goal orientation measure related to transfer of training. The survey appears to have adequate psychometric properties and may be useful to researchers in this domain. To further this research program, we must examine the manner in which situational factors interact with goal orientation to influence transfer.

Student: Stephanie
Davenport (2006)
Faculty Mentor: Michael
Horvath, Ph.D.
Department of
Psychology, Clemson
University

THE POWER OF POSITIVE RECOLLECTIONS PRIOR TO A POP QUIZ
Presented at the Annual Meeting of the Southeastern Psychological
Association, April 2005.

Student: Ashley E.
Knight (2005)
Faculty Mentor: Donna
Webster Nelson, Ph.D.
Department of Psychology

College life is often demanding, as students are faced with a variety of challenges and potential stressors. Many of these challenges require significant coping and may precipitate dysfunction and withdraw from school (Bray, Braxton & Sullivan, 1999). A notable example concerns coping with frequent evaluations inherent to college coursework. This research sought to develop an intervention (targeting positive emotions and thoughts) as a mechanism for enhancing coping with stress in relation to a "pop-quiz." Students in an introductory psychology class were told that they would be given a pop-quiz following a voluntary writing task and survey. Participants were then randomly assigned to either a positive thought task or a control task. Those in the positive thought condition (assigned to write about successful personal experiences and positive affect) derived several benefits (when compared to control participants who wrote about their morning routine). Specifically, those in the positive thought condition experienced relatively more positive affect and less negative affect than the control participants. They also exhibited a more optimistic outlook and reported less test anxiety. They were more likely to appraise the quiz confidently, essentially perceiving it as a challenge rather than a threat. Perhaps most importantly, they exhibited superior performance on the quiz. Tests of mediation revealed that the superior performance of those in the experimental (vs. control) condition was linked primarily to their greater tendency to appraise the stressor with confidence (expecting to perform well on the quiz).

USING UNDERGRADUATES' PERCEPTIONS TO MARKET SUMMER SCHOOL.
Presented at the National Institute on the Teaching of Psychology
Conference, January 2005

Student: Michelle
Batson (2004)
Faculty Mentors: Darren
Ritzer, Ph.D. and Merry
Sleigh, Ph.D.
Department of Psychology

We surveyed 100 students regarding their perceptions of summer classes. The majority of students felt that universities are obligated to provide summer courses (82%) and that summer classes are necessary to graduate in four years (55%). Sixty-seven percent of our sample had taken summer courses and were more likely to report that summer courses differ from semester courses. For example, students who had taken summer classes described them as having laid back professors, easier grading, and fewer assignments. They also felt that class attendance was more important in the summer. Forced-choice responses pointed to the importance of close contact with the professor. Close contact was positively correlated with enjoyment of, preference for, better attendance in, and higher grades in

summer classes. Although these benefits produced consistently positive responses, students did not offer them as rationale for taking summer courses. When we asked students to list three reasons to take summer courses, the most frequent responses were to 1) graduate on time, 2) get ahead on course work, and 3) improve GPA. The most frequent reasons given not to take summer courses were the 1) cost, 2) need for a job, and 3) desire to relax. Students who had taken summer courses were especially concerned about the cost. The higher the GPA, the lower the enjoyment of and preference for summer classes. However, students who had taken summer classes unanimously agreed that summer students do not have lower GPAs. These results may have value to advisors, teachers, and the administrators.

TAKING PSYCHOLOGY INTO THE RESIDENCE HALLS.

Presented at the National Institute on the Teaching of Psychology Conference, January 2005

Integrating the academic and social aspects of college living has been a longstanding goal of student life agencies. Learning communities have been shown to improve students' grades (Edwards & McKelfresh, 2002; Zheng et al, 2002) and public relations (Schuh & Kuh, 1984). Faculty who participate in such efforts report positive relationships with student and faculty participants, as well as enhanced classroom teaching (Golde & Pribbenow, 2000). The current project was a joint collaboration between Residence Life and the Psychology Department at Winthrop University. The goal was to suggest a variety of ways for psychology faculty to participate in residence hall life, by working closely with student resident advisors. Our poster presented these ideas, as well as practical tools for implementing these ideas on any college campus. One idea was for faculty to present interactive programs on topics that combine psychological principles with typical student situations. For example, faculty might present programs on topics such as conflict resolution, communication, eating disorders, relationships, young adulthood, grieving, college adjustment, and substance abuse. Resident advisors could contribute by pinpointing resident needs, offering a student perspective, advertising the event, creating relevant skits, facilitating role-play situations, and presenting information. A second idea was for faculty to work with resident advisors to develop educational bulletin boards. Third, residence halls can serve as a setting for student-faculty book clubs. Additional ideas included inviting faculty into the residence halls for social events, conducting a jointly run service project, and organizing informal academic advising by faculty in the residence halls.

Student: Lisa Watkins (2005)
Faculty Mentor: Merry
Sleigh, Ph.D.
Department of Psychology

ADVICE FOR CLUB ADVISORS BASED ON STUDENT AND FACULTY PERCEPTIONS.

Presented at the National Institute on the Teaching of Psychology Conference, January 2005

Student: Meghan
Christopher (2005)
Faculty Mentors: Merry
Sleigh, Ph.D. and Donna
Webster Nelson, Ph.D.
Department of Psychology

We surveyed 100 students and 22 faculty regarding their perceptions of faculty club advisors. Faculty and students gave similar ratings to the importance of an advisor displaying clear communication, respect for students, availability, and creativity. Both also credited advisors as having more power than club officers and agreed that advisors should be chosen by club member voting. Despite such agreement, there were many differences. Faculty reported that being ethical and willing to help students were important advisor behaviors, whereas students felt that being experienced and dedicated to the club were more important. Faculty more strongly agreed that advisors have the power to veto club decisions and are necessary for the club to run effectively. Faculty held officers and members responsible for club success and failure. In contrast, students more often distributed blame evenly between the officers, members, and advisor. The more a student felt that an advisor should be accountable to the club, the more responsibility that student attributed to the advisor. The longer a student had been a club member, the more involvement they expected from advisors. Although club members expected high levels of leadership from faculty advisors, club officers felt that faculty should be supportive of student leaders. Although both groups agreed that they clearly understand the role of an advisor, faculty and students appeared to hold differing perspectives. Our conference presentation translated these opinions into practical advice for teachers who work with student groups.

REDEFINING ARS MORIENDI IN THE LORD OF THE RINGS

Presented at the English Graduate Student Association Conference, January 21, 2005

Student: Heather
Harman (2005)
Faculty Mentor: Matthew
Fike, Ph.D.
Department of English

The concept of *ars moriendi* holds that in order to die a good death one must live a good life. Throughout the centuries, however, the definition of a good death has undergone a significant change. In the writings of J.R.R. Tolkien, we see that the concept of *ars moriendi* is reworked to emphasize atonement for sinful living more than living well in the first place. Critics such as Katharyn Crabbe and Ruth S. Noel write of Tolkien's handling of death, but none have addressed Tolkien's revision of the *ars moriendi*. Drawing heavily on Anglo-Saxon and Christian traditions, this paper shows how Tolkien redefines the *ars moriendi* in such a way that a good death is possible despite one's misdeeds. Through his integration of the Anglo-Saxon hero as well as Anglo-Saxon and Christian ideas of death and virtue,

Tolkien provides a method of absolution that allows sinners to achieve a good death, which is consistent with his use of the Anglo-Saxon language throughout his work. Through characters such as Boromir, Tolkien shows that despite grievous sins, one can still achieve a good death if reparations are made. Tolkien also shows that Théoden and Gandalf achieve a good death because they lived a good life as defined by the Anglo-Saxon tradition rather than the good life as defined by the *ars moriendi* tradition. Finally, through characters such as Gollum and Denethor, Tolkien provides examples of contrasting characters who fail to achieve a good death at all.

YOUNG ADULTS' ATTITUDES TOWARD DEAF INDIVIDUALS.

Presented at the Southeastern Psychological Association Conference, April 2005

Past research demonstrated that discrimination exists between hearing and deaf populations (e.g., Cumming & Rodda, 1989; Shank & Kyle, 1995). More recently, Kiger (1997) found that most hearing individuals reported neutral or positive attitudes toward deaf individuals. The main focus of the conducted research was to study the current perceptions of young adults toward the deaf community. Sixty-two undergraduate students were surveyed with "General Attitudes Toward People in the Deaf Community." Half of the students heard a speech about the deaf community prior to completing the survey, while the other half had no additional training regarding the deaf community. Results revealed no differences in attitude toward the deaf based on age, gender, race, religious identification, or time spent with deaf individuals. Similarly, there was no significant difference in attitudes toward the deaf between students who had heard a talk about the deaf community and students who had not. Overall, young adults reported positive attitudes toward the deaf community. Although participants reported low levels of personal prejudice, they attributed higher levels of prejudice to "other college students," perhaps indicating social desirability effects. The belief that prejudice exists in "other college students" was highest for those who spent the most time with deaf individuals. Perhaps individuals who spend more time with the deaf realize that the deaf may have a different experience than the average hearing student perceives them to have. These findings have use for both deaf individuals and those who work with them.

Students: Lisa M. Watkins (2005) and Candice Simons (2004)
Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology

THE RELATIONSHIP BETWEEN GREEK MEMBERSHIP AND EATING BEHAVIORS.

Presented at the Southeastern Psychological Association Conference, April 2005

Eating disorders commonly appear in late adolescence and young adulthood, making college students particularly vulnerable (Alexander, 1998; Nelson & Hughes, 1999). Previous research has found that certain

Students: Nicole Brockwell (2005) and Jerry Richi (2006)

Faculty Mentor: Merry
Sleigh, Ph.D.
Department of Psychology

social groups that contain high-pressure and influence, such as Greek organizations, may be contributing to the already high numbers of individuals with disordered eating behaviors (Alexander, 1998; Crandall, 1988). Research has also found that ninety percent of those with an eating disorder are women (Alexander, 1998), making them more susceptible to these behaviors. The purpose of this research was to investigate eating patterns in relation to membership in campus organizations, particularly Greek organizations. We surveyed 106 young adults with the Eating Attitudes Test (EAT) developed by Garner and Garfinkel (1979). The EAT measures eating behaviors and symptoms of eating disorders. The higher the score, the more disturbed eating behaviors were present. The mean EAT score for the sample was 7.93 (SD= 7.61). A t-test revealed that those involved in Greek membership had a higher EAT score than those not involved, $t(104) = 1.99, p < 0.05$. The mean EAT score for Greeks was 11.38 (SD=7.19) and for non-Greeks was 7.32 (SD=7.55). There were no differences between these two groups on body mass index or age. A t-test also revealed that women had a higher EAT score when compared with men, $t(61) = 2.05, p < 0.05$. The mean EAT score for women was 8.20 (SD=7.72) and for men was 4.74 (SD=3.21). There were no differences between men and women on body mass index or age. There were no differences in eating behaviors based on racial identity, sports involvement, club membership, year in school, or age. In other words, Greek membership was one of the only factors that related to disordered eating behavior. Women were also found to be more vulnerable to disordered eating than were men. Although Greek members and women reported higher disordered eating behaviors, they did not physically differ from their comparison groups. These findings indicate that certain groups may be more susceptible to disordered eating and intervention efforts should be targeted toward them.

MEXICAN AMERICANS: POPULATION PATTERNS AND EDUCATIONAL ATTAINMENT.

Presented at the Annual Meeting of the Southern Sociological Society,
April 14, 2005

Student: Yamilette
Chacon (2005)
Faculty Mentor: C. Jack
Tucker, Ph.D.
Department of Sociology
and Anthropology

This paper examines population growth and age patterns as well as educational levels of Mexican-Americans in the United States by comparing them to those of Non-Hispanic whites and Non-Hispanic blacks. Mexican-American ethnicity is applied to individuals living in the United States who identify themselves as being of Mexican descent. Using data from the 1994 and 2004 March Supplements of the Current Population Survey (CPS), this longitudinal study pays special attention to first generation Mexican-Americans. The data were obtained through the DataFerrett (Federal Electronic Research, Review, Extraction and Tabulation Tool) website. The

large samples are weighted to obtain national estimates. The findings show that the percentage growth rate of Mexican-Americans is markedly higher than that of Non-Hispanic whites and Non-Hispanic blacks, that the median age of Mexican-Americans is dramatically lower than that of Non-Hispanic whites and Non-Hispanic blacks and that the disparity in educational attainment that exists between Mexican-Americans and Non-Hispanic whites and Non-Hispanic blacks diminishes among second and third of higher generation of Mexican-Americans.

PREVALENCE OF CORRESPONDENCE BIAS IN THE CLASSROOM SETTING. Presented at the Southeastern Psychological Association Conference, April 2005

Correspondence bias occurs when observers attribute behavior to an individual's personality rather than the individual's situation. The purpose of this study was to expand on the existing body of research on correspondence bias by examining its prevalence in the classroom setting. Identical questionnaires were distributed to five professors and their 156 students. The questionnaire asked students to rate their professor's personality on twelve personality dimensions. The response options were given on a Likert scale, with 1 representing a trait and 6 representing the opposite trait (e.g., introvert 1...2...3...4...5...6 extrovert). The professors completed the same questionnaire by responding to the traits in a way that best represented their true personality. Responses of students were compared to the responses of their professors to determine how accurately students perceived their professor's personality. The participants' scores were subtracted from the professor's score for each of the 12 traits and then the absolute value of each difference score was added together to have a "summed difference score." Three questions also directly asked participants whether a professor's behavior was more likely to be a consequence of the professor's personality or the classroom situation. Results revealed that students were mostly accurate about their professor's personality. The participants' ratings of their professor's personality did not appear to show a large difference from their professor's self-rating, suggesting that either correspondence bias does not exist in the classroom or that professors' classroom behavior closely parallels their personalities. Despite the high levels of overall accuracy, male students were inaccurate when rating male rather than female professors. This finding indicates that gender may play a role in student perceptions of professors. Additional results demonstrated that when directly questioned, participants were more likely to attribute the behavior of their professor to the professor's personality, while the professors were more likely to attribute their behavior to the classroom situation.

Students: Samuel Cooke
(2005), T. Anthony Nolan
(2005) & Iryna Zaluzhna
(exchange student)
Faculty Mentor: Merry
Sleigh, Ph.D.
Department of Psychology

WHAT MAKES US HAPPY?

Presented at the Annual Meeting of the Southern Sociological Society,
April 14, 2005

Student: Zachary
Moorer (2005)
Faculty Mentor: Jennifer
Solomon, Ph.D.
Department of Sociology
and Anthropology

The focus of this research is the nature of happiness and factors that influence it. The sample from the General Social Survey 1980-2002 was mostly white (85%) and female (57%) with an average age of 46 years. Previous research indicates that a person's subjective beliefs as well as how much the social world reciprocates those beliefs contribute to happiness. The results of regression analyses indicate that factors affecting happiness differed in the 1980s, 1990s, and 2000-2002. Positive self-rated health and greater frequency of religious attendance consistently contributed to higher levels of happiness over all time periods. However, in the 1980s, being white, greater satisfaction with finances, and higher levels of sexual frequency were also important predictors. In contrast, in the 1990s, being older, being white, higher educational attainment, and being married were statistically significant factors along with health and frequency of religious attendance. Recently (2000-2002) good self-rated health and frequency of religious attendance as well as financial satisfaction, higher educational attainment, greater sexual frequency, and being married were important influences on happiness. The subjective experience of happiness may be influenced by changing aspects of culture such as values and beliefs concerning the importance of money, sex, religion, and racial equality.

MEASURING COLLEGE STUDENTS' TIME MANAGEMENT SKILLS WITH AN IN-BASKET TASK.

DAVENPORT, S.A., GRANDE, R.N., BYRD, P.B., NOË, B. AND RITZER, D.R.
Presented at the Southeastern Psychological Association Conference, April 2005.

Students: Stephanie
Davenport (2006), Renee
Grande (2006)
Faculty Mentor: Darren
Ritzer, Ph.D.
Department of Psychology

One way to measure organization and planning is with an "in-basket" test (e.g., Meyer, 1970; Rolland, 1999; Tett, et. al. 2003). An in-basket test is a situational test which consists of letters, memos, phone messages, and other materials which have supposedly collected in an in-basket (Frederiksen, 1962). Participants have a limited time to organize the contents of the in-basket and present a coherent plan for the coming week. The primary focus of this study was to create an original college student-based in-basket test and then compare students who have different levels of obligations. We hypothesized that students who spent at least ten hours working or doing extracurricular activities, and thus had more experience planning a busy schedule, would score higher on the in-basket test. The in-basket task was composed of 39 memos that participants had to organize, prioritize, and use to schedule a hypothetical week. The memos contained dates and times for activities and appointments relevant to college students. To make planning

and organizing more challenging, certain memos were more critical than others, there were conflicting times and dates, and some early tasks were cancelled by later memos. Fifty-two participants were given 15 minutes to organize the in-basket information and fill out a hypothetical schedule for the week. Participants' schedules were scored relative to an "ideal" schedule. Our hypothesis was not supported. Participants who spent at least ten hours outside of the classroom with various obligations averaged about the same score on the in-basket task as those participants who did not. However, when comparing students with jobs to students without jobs, the results approached significance. Although not statistically significant, students without jobs scored higher compared to those students with jobs. The mean scores were 59.4 for people with jobs, and 68.6 for people without jobs. Although the main hypothesis in this study was not supported, the results suggest that there is a potential difference between students who hold jobs during the school year compared to those who do not. Future research should focus on this issue of "work-school conflict" and should utilize this in-basket methodology to measure time management.

OVERTURNING THE HOMOPHOBIC TIDE.

Presented at the Annual Meeting of the Southern Sociological Society, April 15, 2005

So much is seen and heard in the media today about homosexuality that one wonders if the negative stigma attached to homosexual relations might be on its way out. Using data from the General Social Survey (1972-1982 and 1992-2002), this study seeks to find out whether attitudes toward homosexuality have changed over the past three decades and what factors influenced those changes. It is hypothesized that women, those having higher incomes, and individuals with liberal religious beliefs became more accepting of homosexual behavior over this 30 year time span. The sample was 56% female and 85% white. The results indicated that women were indeed more likely to support homosexuality and also showed more change in acceptance over the 30 year time frame. Similarly, liberal religious beliefs also had a positive effect on attitudes toward homosexuality; however, people with fundamental religious beliefs showed little change in acceptance. Finally, a person's level of income did not affect any considerable change in acceptance of homosexuality over that time period. Overall, attitudes toward homosexuality have become more supportive in the last 30 years, but it varies within different segments of the population.

Student: Sarah Costner
(2005)

Faculty Mentor: Jennifer
Solomon, Ph.D.

Department of Sociology
and Anthropology

RELATIONSHIPS AMONG RACE, BODY IMAGE, AND EATING BEHAVIORS.
Presented at the Southeastern Psychological Association Conference, April, 2005

Students: April Morrison (2005)
and Trista Summer (2005)
Faculty Mentor: Merry
Sleigh, Ph.D.
Department of Psychology

Previous research has examined the relationships between race and body image (Molloy & Herzberger, 1998) and between body image and eating disorders (Mintz & Betz, 1988). Our study examined these ideas in conjunction, by assessing body image and its relationship to eating behaviors among young adult African American and Caucasian women. Participants in our study were 75 Caucasian and 70 African American undergraduate women. 'The Questionnaire for Eating Disorder Diagnoses' was used, which consisted of questions related to the following topics: past and current weight, exercise, dieting, and attitudes or behaviors about eating or bingeing (Mintz, O'Halloran, Mullholland, & Schneider, 1997). "The Body Esteem Scale" was also used to allow the participants to rate their body images based on three dimensions: physical condition, sexual attractiveness, and weight concern (Franzoi & Shields, 1984). Results indicated that Caucasian women have a more negative body image than African American women. African Americans rated their sexual attractiveness body esteem, weight concern body esteem, and physical condition body esteem significantly higher than Caucasian women, even though the two races' physical structure (height, weight, etc.) did not differ. Almost eighty percent of the surveyed college women exhibited symptoms characteristic of disordered eating. Women who felt confident about their weight and women who felt they were in good physical condition had healthy eating habits. In contrast, women who rated themselves as having very unhealthy eating habits had a higher ideal weight, lower body esteem about their weight, and lower body esteem about their physical condition than women in the healthy and very healthy eating habits categories. No relationships were found between the eating habit categories and age, height, or sexual attractiveness body esteem. Women's body image and eating behaviors were similar to those of women surveyed more than 15 years earlier (Mintz & Betz, 1988). Both body image and race were related to differences in eating patterns. These issues may be particularly relevant to academic and counseling professionals. An increased understanding of a woman's perspective may enable those around her to guide her to make better choices for herself and her situation.

MEMORY BIAS IN RECALL OF TEST ANXIETY.

Presented at the Southeastern Psychological Association Conference, April 2005

Students: Trista
Summer (2005), Margy
Menlove (2004), and
Julie Beville (2005)

The current study replicated Dewhurst and Marlborough's (2003) previously published study on memory bias, with a larger sample size. Dewhurst and Marlborough (2003) found that positive memory bias (e.g., overestimation of pre-test anxiety by students) serves a self-enhancement role by maximizing

a feeling of pride in successful coping efforts. Negative memory bias (e.g., underestimating the pre-test anxiety) by less successful students allows them to maintain emotional equilibrium by downplaying their emotional investment in the event. Thus, memory bias serves the purpose of maximizing self-esteem in both groups. Participants were 31 male and 72 female students. We used two questionnaires, which were designed by Dewhurst and Marlborough (2003) and included modifications of the Beck Anxiety Scale. Participants rated their test anxiety two days before taking a test and immediately after receiving their grade on that test. Participants were also asked to recall their self-reported level of pre-test anxiety. The results indicated that the higher a student's anxiety, the more important that student perceived the test to be. The more important the student perceived the test to be, the harder that student worked to prepare. As preparation level increased, so did age and grade point average. We categorized participants into categories -- those who did better on the exam than they expected (35%), those who did worse on the exam than they expected (53%), and those who did exactly what they expected on the exam (12%). The results indicated that across these categories, students recalled less anxiety after receiving their grades than they had reported prior to receiving their grades. Although there were no gender differences in rating of the exam importance before taking the exam, women rated the exam as less important than did men after receiving their grades on the exam. The inaccuracy of memories seen in this study may have significance in the clinical setting, where clients are often asked to recall previous emotional states. Perhaps this is further proof that in order to give an accurate depiction, a patient attempting to self-report must rely on diaries, rather than the whims of his memory and its biases.

Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology

LIFE AS A MILL WORKER IN FORT MILL, SOUTH CAROLINA, DURING THE TENURE OF SPRING'S INDUSTRIES.

Presented at the Annual Meeting of the Southern Sociological Society, April 14, 2005

In this paper, I will apply Emerson's dependency theory to the tenure of Spring's Industries (1887-2003) in the upstate South Carolina town of Fort Mill. From historical research and interviews with retired mill workers, I was able to conclude that Emerson's dependency theory applied to Fort Mill.

Student: Jason W. Hall (2005)
Faculty Mentor: Douglas Eckberg, Ph.D. and Jonathan Marx, Ph.D.
Department of Sociology and Anthropology

RELATIONSHIPS AMONG IMPLICIT THEORIES OF FRIENDSHIP, IMPLICIT THEORIES OF ROMANTIC RELATIONSHIPS, AND RELATIONSHIP SATISFACTION.

Presented at the Southeastern Psychological Association Conference, April 2005
Previous research has demonstrated that implicit beliefs about romantic relationships predict relationship satisfaction and longevity (Franiuk,

Students: Stephanie L.
Turner (2005) and Lisa M.
Watkins (2005)
Faculty Mentor: Merry
Sleigh, Ph.D.
Department of Psychology

Cohen, & Pomerantz, 2002). Previous research has also demonstrated that attachment to friends has some similarities to attachment to romantic partners (Miller & Hoicowitz, 2003). The current study examined the relationship between implicit theories regarding romantic relationships and best friendships. Ninety-five young adults were given the Relationship Theories Questionnaire (RTQ) revised by Franiuk, Cohen, and Pomerantz (2002). This scale assessed participants' tendency to rely on a "soulmate" (SM) or "work-it-out" (WIO) theory in romantic relationships. The participants also were given a revised version of the scale, in which references to romantic partners were replaced with references to best friendships. The majority of participants preferred the SM theory of romantic relationships (74%) and the SM theory of best friendships (68%). The romantic relationship and best friend scales were highly correlated. Regardless of which implicit theory participants held, there were no differences in number of or satisfaction with best friendships or romantic relationships. Participants who held the WIO theory of romantic relationships had been with their romantic partner longer than had participants with the SM theory. Women had greater longevity and satisfaction in their best friendships than did men. However, they did not differ in romantic relationship satisfaction and longevity, or on their implicit relationship theories. Participants who were in a romantic relationship did not differ from participants not in a relationship. Similarly, we found no significant differences between African Americans and Caucasians. Participants reported a mean of 20.33 (SD = 17.40) friends and 4.03 (SD = 2.96) best friends. The more friends a participant reported having, the more satisfied that participant was with those friendships. The more satisfied a participant was with friends, the more satisfied that participant was with his romantic partner. Our results suggest that the beliefs that govern one type of relationship (e.g., a romantic relationship) in an individual's life are highly similar to the beliefs that govern other types of relationships (e.g., a friendship). In other words, implicit theories of relationships may be global rather than focused.

LEAD ANALYSIS BY ATOMIC ABSORPTION SPECTROMETRY THROUGH AN ABSORPTION TUBE WITH TUNGSTEN COIL ATOMIZER. Presented at the South Carolina Academy of Science Meeting, March 16, 2005

Student: Kevin
Washington (2006)
Faculty Mentor: Cliff
Calloway, Ph.D.
Department of Chemistry,
Physics and Geology

Lead exposure is known to cause a wide variety of health concerns at low concentrations, and is a strictly regulated material. Sensitive methods for monitoring lead in environmental, clinical, and biological samples usually involve either atomic emission, absorption, or mass spectrometric techniques. These methods typically require the collection of samples, followed by transportation to an analytical lab. The most common sample

preparation for lead analysis involves hydride formation. Few methods exist that allow for direct analysis at the sample site. This project involved the construction and characterization of a tungsten coil atomic absorption spectrometer for lead analysis. The tungsten coil, utilizing a hydrogen/argon purge gas, has been shown to be a small, inexpensive alternative to graphite tube atomic spectrometry. Combining the tungsten coil atomizer with an absorption tube, lead EDL light source, and medium resolution CCD fiber optic spectrometer mimics the wet chemistry intensive hydride generating graphite furnace AAS system, with a much smaller footprint, and potential for portability. (Supported by NSF Grant #CHE-0346353)

REGULATION OF ALPHA-SMA AND COLLAGEN BY CAVEOLIN-1 IN HUMAN LUNG FIBROBLASTS

TIM ALLEN ELLMERS, ELENA TOURKINA, RICHARD SILVER AND KEVIN SCHEY

Presented to the Division of Rheumatology and Immunology, August 11, 2004

Presented at the College of Graduate Studies Science Day, August 13, 2004

Presented at the Medical University of South Carolina Science Day, November 20, 2004

Presented at the Tri-Beta National Conference on April 15, 2005

Caveolin-1, the principal protein in caveolae, the flask-shaped membrane invaginations, has been found to regulate certain aspects of scleroderma lung disease. Our studies revealed several strong connections between caveolin-1 and scleroderma. Scleroderma lung fibroblasts (SLF) contain lower levels of caveolin-1 than normal lung fibroblasts (NLF). Similarly, the fibrotic lungs of bleomycin-treated mice contain less caveolin-1 than normal saline-treated mouse lungs. Using siRNA to decrease caveolin-1 expression in NLF causes a significant increase in collagen and alpha-smooth muscle actin (a-SMA) expression, but has no effect in SLF. Immunocytochemistry confirmed that while in NLF caveolin-1 exhibited intense perinuclear staining, in SLF only modestly peripheral staining was observed with little or no staining in the vicinity of the nucleus. Immunostaining also revealed that scleroderma cells, in which a-SMA was organized in stress fibers, contained even lower levels of caveolin-1. These observations firmly support our hypothesis that caveolin-1 regulates collagen deposition and a-SMA expression in NLF and SLF. In conclusion, we discovered that caveolin-1 plays an important role in the regulation of a-SMA and collagen in NLF. Based on our data we speculate that caveolin-1 upregulation will inhibit lung fibrosis by inhibiting the differentiation of NLF to myofibroblasts.

Student: Tim Allen Ellmers
(2005)

Faculty Mentor: Elena
Tourkina, Ph.D.
Medical University of South
Carolina

EXPOSING THE TRUE OBJECTIVE!

Presented at the Southeastern Writing Centers Association, February 12, 2005

Student: Lacey Hopkins
(2005)

Faculty Mentor: Jane
Smith, Ph.D.

Department of English

Students regularly come to the writing center with misconceptions about what the center does and how they will benefit from their sessions. This results in sessions that are time wasting and frustrating to the student and tutors. These faulty assumptions are a result of misinformation from faculty and other students who are uninformed. Classroom visitations in "freshman focus" and first semester writing classes are the first step and actually serve two essential purposes. In only five minutes, both the students and the faculty member are educated about the center. The sessions include defining the goals of the writing center and what kind of help a tutor will give. This informs the student, but accomplishes the bigger objective of subtly educating the faculty. In addition, students will read a sheet in the beginning of each session, while the tutor is reading the student's work. The sheet will include the main goal of the writing center, what to expect in sessions, and a comment/question section. With this approach, both students and faculty will have a better understanding and appreciation for the writing center, and tutors will have an increased likelihood of sessions that are beneficial and on target.

MUTATIONAL ANALYSIS OF A PATIENT WITH CONCOMITANT CEREBROTENDINOUS XANTHOMATOSIS AND SMITH-LEMLI-OPITZ SYNDROME; TIFFANY HUNTER, CURZIO SOLCA, SHAILESH PATEL Presented at the Medical University of South Carolina, August 12, 2004

Student: Tiffany Hunter (2005)
Mentor: Shailesh Patel,
PH.D., M.D.
Medical University of
South Carolina

Cerebrotendinous Xanthomatosis (CTX) is a rare recessively inherited disorder of bile acid synthesis caused by mutations in the sterol 27-hydroxylase gene (CYP27) located on human chromosome 2. The disease is characterized by tendon xanthomatosis, juvenile cataracts, and progressive neurological dysfunction. Smith-Lemli-Opitz syndrome (SLOS) is an autosomal recessive disorder of cholesterol metabolism caused by mutations in the gene for $\Delta 7$ -dehydrocholesterol reductase in chromosome 11. It is characterized by congenital malformations, mental retardation, dysmorphism of multiple organs, and delayed neuropsychomotor development. A patient was discovered with clinical history and signs consistent with CTX. Elevated levels of cholestanol were found using biochemical analysis, which confirmed the CTX disease. Elevated levels of 7-DHC consistent with SLOS were also found. To elucidate the molecular basis for this unusual biochemistry, we screened the CYP27 and DHCR7 genes for mutations. Genomic DNA was extracted from the patient's blood and used to perform PCR amplification and sequencing of exons 1-9 and 3-9 for CTX and SLOS respectively, intron-exon boundaries. For CTX, we

identified a previously reported 2 bp deletion in exon 6 (Δ 2bpC1201) and a novel mutation G276C in exon 1 that affects the splice site. Although no mutations were observed in DHCR7 gene, several polymorphisms were found in exon 6 at C703T (D146D), exon 9 at C1423T (D386D), and T1537C (G424G). Thus we have a genetic and biochemical configuration of CTX in our patient. There were no mutations identified in the DHCR7 gene. Our interpretation for the elevated 7DHC of presentation is that the upregulation of cholesterol biosynthesis resulted in an excess production of the precursors.

THE VOTING PATTERNS OF AMERICAN BLACKS: WHY DEMOCRATS?

Presented at the South Carolina Political Science Association Meeting,
February 26, 2005

The research paper takes an in-depth look at the dynamics behind the strong bond that exists between the Democratic Party and American Blacks. The paper closely examines the relationship between the church and the black community and in turn the culture that helps to bolster the strong connection between the Democrats and blacks. The research finds that while blacks are liberal when it comes down to issues of economic and social issues, blacks are very conservative on issues of morality. While doing the research, I found that this "double consciousness" has created an opening for the Republican Party to exploit in order to weaken the partnership between blacks and the Democratic Party. In addition, I found that the perception of morality had an enormous deal to do with the outcome of the 2004 Election.

Student: Willie Lyles, III (2006)
Mentor: Scott Huffman, Ph.D.
Department of Political Science

TIME HEALS ALL WOUNDS, EVEN SEPARATION ANXIETY

Presented at the Biennial Meeting of the Society for Research in Child
Development, April 7-10, 2005

Data from the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development were used to examine factors that affect maternal separation anxiety. Our findings indicate that maternal separation anxiety decreased over the first two years of the child's life. Maternal ethnicity explained differences in MSA with African American mothers having the highest scores. White mothers' separation anxiety was significantly lower than that of black mothers and mothers of "other" ethnicity. Maternal social support, mother's extraversion, and neuroticism were also significant predictors of separation anxiety. Geographic location also had a main effect on MSA, but this effect disappeared when income-to-needs ratio was controlled. Health problems during pregnancy and child gender did not explain variability in maternal separation anxiety. Implications are discussed. This study was conducted

Students: Seteria C.
Williams (2005), Jennifer
E. Cox (2005), Ashley J.
Giannuzzi, (2004)
Faculty Mentor: Cheryl
Fortner-Wood, Ph.D.
Department of Psychology

by the NICHD Early Child Care Research Network supported by NICHD through a cooperative agreement that calls for scientific collaboration between the grantees and the NICHD staff.

CAROLINA METHODISTS CONFRONT JAZZ AGE MORALITY: THE FUNDAMENTALIST REACTION TO 1920'S YOUTH CULTURE

Presented at the National Conference on Undergraduate Research, April 22, 2005

Student: Suzanne
Stewart (2004)
Faculty Mentor: Andrew
Doyle, Ph.D.
Department of History

The 1920s witnessed a dramatic liberalization of American cultural and moral values along with a concomitant decline in the centrality of religion in the public sphere. This transformation was especially controversial in the South, where the urban middle class was particularly receptive to the Jazz Age culture that diffused into the region, in large part by means of the new media of movies and radio. Conservative Evangelical Protestants regarded this phenomenon as merely one additional chapter in a decades-long saga of moral and religious decline. Angry over the declining significance of religion in the public sphere and the perceived decline in public morality, they mounted the Fundamentalist movement in response. Most scholars have focused on theological issues and the debate over the literal truth of the Bible—especially as manifested in the evolution controversy—as a driving force behind the rise of southern Fundamentalism. This paper examines the extent to which southern Fundamentalists were motivated by the declining power of Evangelical churches to define public morality. It focuses on Methodism, which was the most politically engaged Evangelical denomination during that era, and it is based on an analysis of Methodist denominational weeklies in North and South Carolina from 1919 through 1929.

ASSUMPTIONS AND WISHFUL THINKING: DEALING WITH MISCONCEPTIONS AS THEY WALK IN THE DOOR

Presented at the Southeastern Writing Center Association Annual Conference, 2005

Student: Leanna
Trimper (2006)
Faculty Mentor: Jane
Smith, Ph.D.
Department of English

In his article, "The Idea of a Writing Center," Stephen North writes that "Our job is to produce better writers, not better writing." Although he wrote this 20 years ago, the mission of the writing center is not clear to all who use it. Both students and faculty members at Winthrop have misconceptions about the writing center. Often wishful thinking, these misconceptions are still something that tutors will have to be aware of and deal with on a case-by-case basis because they impact tutorials. Information from student surveys and faculty interviews will reveal those faulty assumptions that can change the tone of a tutorial. Exploring the misconceptions people have of the center allows the tutorial staff to be prepared to deal with them as students come into the center.

EXPANDING MINDS THROUGH COLLABORATION: THE IMPORTANCE OF INCREASING STUDENT, TUTOR, AND PROFESSOR INTERACTION AND THE WRITING CENTER.

Presented at the Southeastern Writing Center Association Annual Conference, 2005

My research investigates the importance of fostering collaboration between professors, students, and tutors in the context of a writing center in order to expand the cognitive ability of students. By overcoming the hurdles of atmosphere, the inherent hierarchies in a faculty-centered environment, and the political implications of the writing center, we can work against these limitations to stimulate independent student learning. The atmosphere of a faculty-centered writing center is often a daunting experience for first-time students. The professional, business-like environment can be countered by tutors who are willing to interact collaboratively with students. An equally important method to increase active learning is encouraging more interaction between students and professors, thus creating more discussion about writing. This paper will explore the possibilities for students to increase their ability to think once the hierarchical relationships in association with the writing center are diminished. Finally, there will be an explanation on how collaboration inside and outside of the writing center can benefit professors, students, and tutors, and the university.

Student: Jericho Williams (2005)

Faculty Mentor: Jane Smith, Ph.D.

Department of English

MAXIMIZING LEARNING FOR STUDENT AND TUTOR: STRATEGIES FOR TUTORIALS WITH ESL STUDENTS

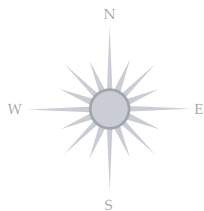
Presented at the Southeastern Writing Center Association Annual Conference, 2005

An article by Jennifer Staben and Kathryn Dempsey Nordhaus in the recent publication *ESL Writers* points out that tutors and ESL student clients must often work to maintain a balance of higher order concerns like content and structure with more mechanical concerns such as grammar and acceptable English expression. Staben and Nordhaus's idea connects well to a primary goal of writing centers, that of fostering learning on multiple levels. For the student, tutorials involve the learning of the subject matter and methods of effective writing through critical thinking, in addition to the learning of English through language instruction; for the tutor, they involve learning through intellectual and cultural exchange. Tutors and students, then, are presented with the challenge of maximizing each of these intertwined types of learning. Case studies, tutor surveys, and ESL student interviews will identify student goals for the learning of subject matter, writing conventions, and English language usage and evaluate strategies for most effectively reaching them. The discussion will focus on both tutor and student viewpoints in developing and implementing effective, collaborative strategies for ESL tutorials.

Student: Kristin Jeffords (2005)

Faculty Mentor: Jane Smith, Ph.D.

Department of English



OTHER STUDENT-FACULTY COLLABORATIONS

THE EFFECT OF NON-POINT SOURCE RUNOFF AND URBAN SEWAGE ON THE YAQUE DEL NORTE RIVER, DOMINICAN REPUBLIC

PETER PHILLIPS, F. ARTURO RUSSELL AND JOHN TURNER

Manuscript in review for the Special Issue of International Journal of Environment and Pollution (IJEP) on Environmental Management in the Latin American and Caribbean Region.

Student: John Turner (2004)

Faculty Mentor: Peter Phillips, Ph.D.

Department of Biology

Dominican Republic per capita water availability is approximately 1,500 m³ per capita/year; however, with extensive irrigation and urban consumption, regionally water is scarce. Domestic and industrial wastewater input and non-point source runoff degrades surface water. A Yaque del Norte watershed survey monitored dissolved oxygen, the likelihood of eutrophication due to nitrogen and phosphorus from point and non-point sources, as well as high conductivity likely resulting from agricultural runoff. The upper, mainly forested watershed has good water quality except for untreated sewage contributed by the city of Jarabacoa. The mid-watershed has a deforested landscape, mixed agriculture, and the city of Santiago contributing large amounts of nitrogen and phosphorus. The lower watershed has extensively-irrigated agriculture resulting in appreciably higher conductivity from runoff, as well as high nitrogen and phosphorus. Sedimentation from erosion is evident throughout the watershed. The challenge of satisfactorily managing the Yaque del Norte River land and water resources for all stakeholders is critical and urgently needs to be addressed.

ANAKIN SKYWALKER: MYTHIC HERO OR ZERO?

Accepted for presentation at the International English Honor Society, Sigma Tau Delta for the Annual Conference, March 2005

Submitted to the Oswald Review, 2005

Student: Heather Harman (2005)

Faculty Mentor: Marguerite Quintelli-Neary, Ph.D.

Department of English

This essay examines the character of Anakin Skywalker from George Lucas' Star Wars epic, and examines whether Anakin can be classified as a mythic hero. Joseph Campbell provides a breakdown of qualities that a character must possess in order to be considered a hero, and this essay seeks to prove that Anakin possesses these qualities despite a few bumps along the way. Not only does Anakin possess the characteristics of a hero, he also completes the heroic journey that Campbell describes, which consists of a three part journey containing a departure, a fulfillment, and a return. Having fulfilled the necessary requirements, Anakin can successfully be considered a mythic hero.

THE EFFECTIVENESS OF THE INTERDISCIPLINARY TUTORIAL BASED ON STUDENT ATTITUDES

Accepted for presentation at the Southeastern Writing Center Association Annual Conference, 2005

Much has been written on whether or not the writing center tutor needs to be well versed in many different disciplines in order for the tutorial to be effective. Some people argue that the methods and format of the English tutorial remain more or less universal, regardless of the subject matter. Others argue that area-specific tutors are more effective in their ability to tutor within their fields of expertise. I intend to take another approach to this argument. My paper focuses on the attitudes of the students and professors in the departments of science, math, visual and performing arts and other humanities in order to determine their attitudes on interdisciplinary tutorials. The students' attitude on the competence of the tutor plays a large role in evaluating its effectiveness. If the student does not believe that he can be helped by a tutor outside of his field, then the issue of whether or not the tutor can actually be helpful is irrelevant. After interviewing students and faculty outside of the English department with regard to their conceptions of the writing center, the writing center itself will be evaluated in order to determine what factors can be attributed to actual inadequacies in meeting the students' needs. This study is designed to identify how students perceive the writing center, the influence of that perception on the tutorial, and what can be done to influence more students from outside the English department to make use of the writing center's facilities.

Student: Guenevere Matteson (2005)
Faculty Mentor: Jane Smith, Ph.D.
Department of English

STRENGTHENING COMMUNITY LEADERSHIP IN CHARLOTTE, NC:
THE UNC-C/COMMUNITY LINK CDWS PARTNERSHIP PROPOSAL
Proposal for \$150,000 submitted to the US Department of Housing and Urban Development pursuant to Funding Opportunity No. FR-4950-N-08 for Opportunity Title Community Development Work Study CFDA 14.512, May 1, 2005.

This application proposes a two-year program to support disadvantaged and minority graduate students' participation in a Masters in Public Administration program. The focus of the students' study will be on community building in the greater Charlotte area using affordable housing as an intervention. The students' program of study will be formed by a collaboration between the MPA program at The University of North Carolina at Charlotte and the Community Link social casework and supportive housing agency. The application describes using the facilities and operations of Community Link as a field site for the MPA students who after graduation are likely to work in housing and housing-related administrative positions in the greater Charlotte area.

Student: Monica Deneen Croskey (2005)
Faculty Mentor: Paul Dezendorf, Ph.D., MSW, MBA
Departments of Social Work

WINTHROP UNIVERSITY UNDERGRADUATE RESEARCH INITIATIVE

COLLEGE OF ARTS AND SCIENCES

The Winthrop University Undergraduate Research Initiative (WUURI) in the College of Arts and Sciences supports a student-centered learning environment that fosters student research, scholarship, and creative activities. The Initiative encourages students and faculty mentors to collaborate in the design and implementation of projects and the dissemination of results.

DIRECTOR OF UNDERGRADUATE RESEARCH:

Dwight Dimaculangan, Ph.D.

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Jean Silagyi-Rebovich, Ph.D. – Office of Assessment

Jane B. Smith, Ph.D. – Director of the Writing Center

Kristi Westover, Ph.D. – Biology

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